

## CLAIMS

1. Generation and application process on a support of a digital spatial marking of  $X \times Y$  points according to a resolution of  $d1x$  by  $d1y$  points per surface unit and intended to be read by a reading device with a resolution of  $d2x$  by  $d2y$  points per surface unit, taking into account that the ratio  $d1x/d2x$  and/or  $d1y/d2y$  is larger than 1, this process comprising the following steps:
  - sub-sampling of the digital spatial marking in  $X$  according to a factor  $n_x = d1x/d2x$  and in  $Y$  according to a factor  $n_y = d1y/d2y$ ,
  - erosion of the points intended to be applied so as to leave one point every  $n_x$  points in  $X$  and one point every  $n_y$  points in  $Y$ ,
  - application of the spatial marking on the support.
2. Generation and application process of a spatial marking according to claim 1, **characterized in that** the resolution of the reading device is identical in  $X$  and in  $Y$  that is to say  $d2x = d2y$ .
3. Generation and of application process of a spatial marking according to claim 1 or 2, **characterized in that** the resolution of the initial spatial marking is identical in  $X$  and in  $Y$  that is to say  $d1x = d1y$ .
4. Generation and application process of a spatial marking according to claim 1 or 2, **characterized in that** the ratio of resolution in  $X$  ( $n_x$ ) and the ratio of resolution in  $Y$  ( $n_y$ ) is comprised between 2 and 5, 2 and 5 inclusive.
5. Process of recognition of a spatial marking applied according to the process of the claims 1 to 4, **characterized in that** it includes the following steps:
  - digital acquisition of an image of the support,
  - filtering on the image obtained to eliminate the parts not comprising the spatial marking,
  - use of autocorrelation properties to compensate every affine transformation introduced by the acquisition,
  - compensation in translation of the spatial marking using an intercorrelation between the obtained spatial marking and the group of possible positions of the spatial marking defined by a key,
  - decoding of the digital information by statistical correlation for each bit of information.
6. Detection process of a spatial marking according to claim 5 **characterized in that** the filtering stage is based on a compensation of a uniform initial colour.

7. Detection process of a spatial marking according to claim 5 **characterized in that** the filtering stage is based on a prediction of the image of the initial support by a soundproofing filter.
8. Detection process of a spatial marking according to claims 5 to 7, **characterized in that** the digital acquisition of the image is carried out by a scanner.
9. Process of detection of a spatial marking according to claims 5 to 7, **characterized in that** the digital acquisition of the image is carried out using a portable detector.
10. Process of detection of a spatial marking according to claims 5 to 7, **characterized in that** the acquisition and processing of the spatial marking are carried out in two geographically remote locations.
11. Application process of the spatial marking according to claims 1 to 4, **characterized in that** the application process of the spatial marking on the support is constituted by a printing process.
12. Application process of the spatial marking according to claims 1 to 4, **characterized in that** the application process of the spatial marking on the support is constituted by an engraving process.